



**GDS Associates, Inc.**  
Engineers and Consultants

*- Final -*

**PROGRAM DESIGN/IMPLEMENTATION PROCESS REVIEW**

**OF THE**

**FITCHBURG GAS AND ELECTRIC LIGHT COMPANY'S**

**LOW-INCOME ELECTRIC ENERGY EFFICIENCY PROGRAM**

**DECEMBER 7, 2001**



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## I. Executive Summary

This report describes the methodologies employed and the results of the Program Design/Implementation Process Review of Fitchburg Gas and Electric Light Company's (FG&E) Electric Low Income Program (Program). GDS Associates, Inc. was contracted to conduct the Process Review in an effort to assess the current program design and evaluate the various staff's level of knowledge of key program goals, obtain their opinion on program effectiveness and recommend improvements/ modifications as appropriate. This report is the first in a series of three reports that make up the Program Evaluation of FG&E's Electric Low Income Program. The subsequent program assessments will focus on: 1) customer awareness and satisfaction; and, 2) on-site quality control of installed measures.

The Electric Low Income Program provides participants<sup>1</sup> with an energy audit, education on energy saving opportunities, direct installation (at no cost to the customer) of low-cost energy efficiency measures and installation of more substantial energy savings measures (also at no cost to the customer) upon cost effectiveness screening. The measures include all of the major residential end uses (*i.e.*, lighting, refrigeration, heating and air conditioning, and water heating).

FG&E began offering its Low Income Program, in its current form, in July 1998. During 2000, the Company added a New Construction, Multi-Family and Rehabilitation (NC/MF) component to the program. This component targets owners and developers of low-income multi-family buildings as well as new single-family homes. Because of the newness of the NC/MF component, this Process Review focuses on the In-Home Services component but includes references to NC/MF as appropriate.

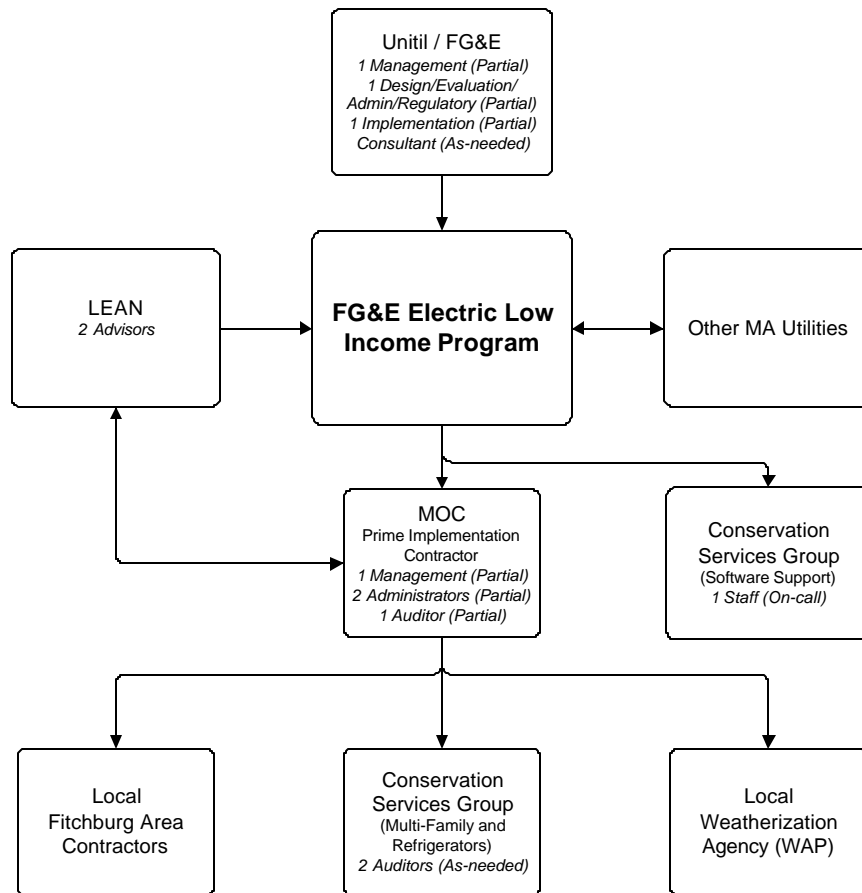
The implementation and administrative contractor for this program is the Montachusett Opportunity Council, Inc. (MOC). MOC subcontracts to Conservation Services Group, Inc. (CSG) for such implementation services as refrigerator installation, removal, and recycling as well as multi-family audits and installations. In addition, CSG is responsible for the development of program-related software and ongoing computer support. The Low-Income Energy Affordability Network (LEAN), a Settlement Party to FG&E's 5-Year Energy Efficiency Program Filing, Docket No. D.T.E. 98-48/49 (5-Year Plan), is involved in program planning and implementation in an oversight role. Figure 1 offers a graphic illustration of the how the various parties fit into the Program's design and implementation.

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<sup>1</sup> Eligible customers are those residential FG&E electric customers at or below 200% of the federal poverty limit.



**Figure 1**  
**FG&E Electric Low Income Program**  
**PROGRAM DESIGN / CONTRACTOR LAYOUT**



Note: Staff levels at FG&E and MOC are noted to be "Partial" because all levels of staff are allocated to several other programs/responsibilities.



## **I.A. Overview of Methodology**

The overall goal of the Process Review was to assess the effectiveness of the Program design and operations and offer recommendations / observations that can be used to improve the Program. This assessment included secondary research of program related materials and staff and contractor depth interviews.

**Secondary Research:** The purpose of the secondary research was to develop a basis of understanding program theory and logic flow, goals and objectives, and the scope of services as originally designed/envisioned. The documents reviewed included FG&E's 5-Year Plan, FG&E's 1998 and 1999 Annual C&LM Reports<sup>2</sup>, program marketing materials, database and other implementation materials (*e.g.*, forms, reports), LEAN's by-laws, and relevant contract documents.

**Staff and Contractor Interviews:** A total of eight depth interviews were conducted with utility staff members (2), implementation contractors (5), and a LEAN representative (1). A single interview guide, consisting of forty-two questions, was used for all interviews. Length of interviews ranged from one to three hours per interviewee. Eight researchable areas were assessed with each interviewee as follows:

- Interviewee's Role, Program Goals, and Program Planning
- Participant Recruitment and Marketing
- Program Design and Operations
- Information, Resources, and Staffing
- Internal Communications and Administration
- Communications with Program Participants & Program Participant Service
- Program Issues and Innovations
- Overall Performance

The interview guide is included as Appendix A to this report.

## **I.B. Summary of Key Findings**

This section synthesizes and summarizes the salient information collected as part of the Process Review. For reporting purposes, the eight researchable areas that were addressed in the interviews have been rolled into three summary process issue areas: program goals, program design and implementation, and overall performance<sup>3</sup>.

**Program Goals:** The goals and objectives of the Program are not consistently understood by the parties involved. The root cause of this ambiguity appears to be the lack of a single, central program document that clearly defines the Program in detail and is easily accessible

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<sup>2</sup> These reports, required from all Massachusetts electric IOU's, are filed annually with the Department of Telecommunications and Energy (DTE) and provide a quantitative analysis of the companies' energy efficiency program performance over a rolling 3-year period.

<sup>3</sup> These three summary categories relate to the eight researchable areas previously defined. The Program Goals and Overall Performance categories match directly and the Program Design and Implementation summary category encompasses the remaining six researchable areas.



FG&E's Electric Low Income Program

to all parties. It was noted by both MOC and CSG, that they did not have a clear definition of the Program specifics. Moreover, there does not seem to be adequate input from MOC or CSG in the planning process for determining Program production targets. Although LEAN is involved in the planning process on behalf of MOC, there appears to be a communication gap between LEAN and MOC.

**Program Design and Implementation:** The implementation flow of the program is shown graphically in Figure 2. With the exception of the newly implemented NC/MF component of the Program, the Program is being implemented essentially as designed and is on target to reach the current year's production goals. Lines of communication between FG&E, MOC and CSG appear to be open but there is concern about responsiveness and the lack of formal communication channels (*i.e.*, written documentation). Participant response to the program was noted to be very good, based on anecdotal feedback.

There are a few areas within the implementation flow of the Program that were noted to be in need of improvement. The key specific issues raised were:

- The database of R-2 customers used by MOC is outdated and incomplete [It should be noted that there appears to be a miscommunication regarding this issue, which likely stems from software problems.];
- The lack of a means for MOC to deliver audit data to FG&E electronically results in redundant input of large amounts of program related data;
- Program manual or other central Program document would be helpful as a reference tool for all parties;
- In-field quality control by a third party is a missing component of the Program;
- NC/MF Program component requires further definition;
- Staff resource issues need to be addressed by all parties; and,
- Program related software problems are ongoing issue.

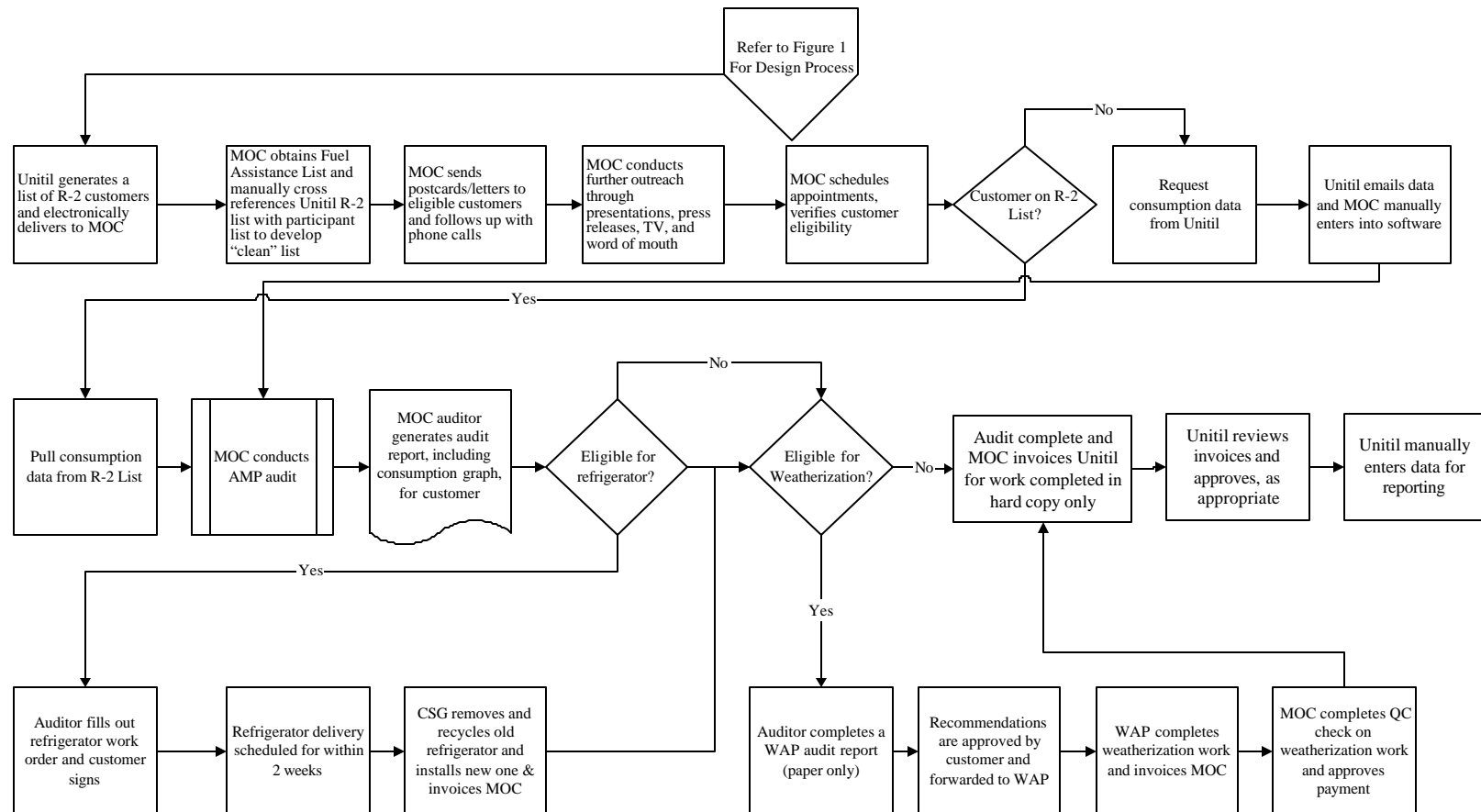
**Overall Performance:** Interviewees were asked to rate the program's success and quality, on a scale of 1 to 10 (with 10 being highest). Overall program ratings for both the success of the program and the quality of the program were very good, with average scores of 8.6 and 7.8 respectively.

Key program strengths were noted to be the recent addition of program staff at FG&E, MOC and FG&E's commitment to serving low-income customers, and the extensive years of experience at both MOC and CSG.

Key program weaknesses were noted to be the audit software, the administration of the Program at the contractor level, ongoing software issues and specific software issues relating to the import of the database of R-2 customers.



**FIGURE 2**  
**FG&E ELECTRIC LOW INCOME PROGRAM IMPLEMENTATION PROCESS FLOW**





Program**I.C. Recommendations**

Although the findings highlight several implementation issues, FG&E's Electric Low Income Program is operating fairly smoothly and has reached previous year's targeted levels of production and is on track to do so again this year. Overall, the Program offers an extremely valuable service to an important population that is often underserved in energy efficiency efforts. In order to improve the efficiency of the program, based on the information gathered during this Process Review, the following recommendations are offered for consideration:

- NC/MF marketing should be conducted as designed (*i.e.*, as described in Section II.C of this Report).
- A Program Manual should be developed that includes a brief but detailed explanation of the goals and objectives of both In-Home Services and NC/MF components of the Program as well as the list of eligible measures, reporting requirements and specific annual production targets.
- Upon completion of a Program Manual, hold a presentation / work session where FG&E would present the document and its intended purpose to MOC and LEAN (and any interested weatherization or other local contractors). Facilitate session in order to develop a more cohesive implementation group.
- When renewing the contract with MOC, draft a new document that includes a detailed scope of services directed at both the existing In-Home Services Component as well as New Construction/Multi-Family; including marketing strategies, eligible measures, communication and reporting protocols, and specific annual production targets.
- Charge either MOC or LEAN with providing meeting notes to FG&E from the monthly LEAN meeting, in an effort to document concerns/issues.
- Develop communication protocols for requesting and delivering information or assistance. A simple email format that includes basic data such as name, date, and nature of request/response could help to clarify communications and create a paper trail to track the number and nature of requests as well as the response times associated with them.
- Conduct a system-wide assessment of the current software, including the audit tool, so that all current problems and inefficiencies can be addressed. This would include streamlining the process for getting R-2 customer billing data to MOC and assessing the upgrades necessary to allow electronic transfer of all audit related data from MOC to FG&E, so that data is not manually entered by FG&E. [LEAN is currently researching the potential for offering a common low income energy management software statewide. MOC and FG&E have been active in this process.]
- Institute an ongoing quality control mechanism for the Program. This could include a random sampling of both telephone surveys and site inspections, targeted at assessing both customer satisfaction and quality/thoroughness of audit and related installations.
- Review the delivery of the program to FG&E electric and gas customers in order to ensure that redundancy of program services is minimized.



Program

## II. Secondary Research

This section of the Process Review presents the results of the secondary research conducted to develop a basic understanding of program theory and logic flow, program goals and objectives, and the scope of services as originally designed/envisioned. The following program information is a culmination of the information extracted from several program-related documents, including: 1) LI elements of Company's 5-Year Plan; 2) LI elements of Company's 1998 and 1999 Annual C&LM Reports; 3) Program marketing and implementation materials; and 4) MOC contract documents.

Section II.A. presents an overview of the program summary. Section II.B. provides information regarding key program goals and related target assumptions. Section II.C. discusses program flow items.

### II. A. Program Summary

The Residential Low-Income Program was developed by FG&E in cooperation with a number of settlement parties including LEAN and the Northeast Energy Efficiency Council (NEEC). It was approved by the Massachusetts Department of Telecommunications and Energy (DTE) and the Division of Energy Resources (DOER) as part of the Company's *5-Year Program Plan* on August 17, 2001. The program consists of two main components: (1) In-Home Services, and (2) New Construction, Multi-Family and Rehabilitation. Numerous energy efficient products and services are delivered through these two components, along with information and education regarding the importance of energy efficiency and encouragement of customers to act on the basis of this awareness.

FG&E's Residential Electric Low Income Program targets residential customers at or below 200% of the federal poverty limit. A vital element of the Low-Income Program is identifying and addressing customers that are characterized by the large percentage of their income required to pay their energy bills. Marketing has focused on those customers on FG&E's low-income rate (R-2 and R-4). Following is a brief description of the two main components of the Low-Income Program:

#### In-Home Services

##### ***Goals:***

- The overall goal of this program component is to help low-income customers save energy and live more comfortably.

##### ***Target Market:***

- Income eligible customers not previously served by the program;
- MOC has focused marketing on FG&E R-2 and R-4 customers whose contact information is provided by FG&E;



Program

- In addition, MOC cross references the FG&E provided list with a listing of those eligible for Fuel Assistance

***Products and Services:***

Include an Appliance Management Program (AMP) and Space Heat Program component. The following products and services are provided, as appropriate, to income eligible customers through this low-income program component:

- 1 to 1.5 hour fuel blind audit that includes the installation of energy efficient materials and education about how energy is used in the home, including educational materials that are left with the customer;
- Up to 8 compact fluorescent light bulbs;
- Replacement of halogen torchieres with compact fluorescent models;
- Replacement of table lamps and fixtures;
- Refrigerator and/or freezer replacement, where warranted based on metering of existing unit;
- Refrigerator coil brush;
- Air conditioner filter;
- Cost effective portion of the cost of a replacement room air conditioner, piggybacking on other programs; and
- Replacement waterbed mattresses or insulated covers.

For homes with electric hot water heaters:

- Electric hot water heater, including heat pump water heater;
- Low flow showerheads and aerators;
- Water heater tank wrap and pipe insulation; and
- Water heater temperature turn down.

For homes with electric space heating (also available for homes with failing fossil fueled heating systems - up to \$10,000 in total incentives available for non-electrically heated homes in 2001):

- Heating system repair or replacement (HEARTWAP piggyback);
- Minor building repair;
- Blower door assisted air sealing, including caulking, weather-stripping, door sweeps, broken window replacement;
- Insulation;
- HVAC duct repair;
- Set-back thermostats; and
- Interior storm windows.

**New Construction, Multi-Family and Rehabilitation*****Goals:***



Program

- Provide services that help low-income customers save energy and live more comfortably now;
- Develop new energy efficient low-income housing resources; and
- Develop an infrastructure for future low-income new housing construction that is more efficient, comfortable, and provides a more attractive investment to builders through access to better lending packages, and access to new technologies and services as they become available.

***Target Market:***

- Owners and developers of low-income multi-family buildings (5 or more units), including housing authorities, to capture lost opportunities during new building construction or major rehabilitation (at least 50% of the tenants must be low-income);
- New single family and 1 to 4 unit low-income homes;
- Income eligible customers that live in multi-family buildings, however lower priority is given to buildings where tenants do not pay utility bills directly.

***Products and Services:***

The following products and services are provided to income eligible customers and/or builder and developers of low-income properties. In addition, residents of existing low-income multi-family buildings are eligible for the same products/services as listed in the In-Home Services component of the Low-Income Program.

- Design assistance through plans review;
- Up to \$500 toward the purchase of ENERGY STAR<sup>®</sup> appliances including; refrigerators, dishwashers, room air conditioners and clothes washers;
- Up to \$500 toward the purchase of ENERGY STAR<sup>®</sup> lighting fixtures;
- Up to \$500 for HVAC commissioning;
- Up to \$500 per unit for builder/developer shell rebates; and
- Replace common area washing machines, where cost effective.

In addition, the following systems may be upgraded in new or existing multi-family buildings, if cost effective:

- HVAC controls;
- Air conditioning equipment;
- Primary and storm windows; and
- Motors.



Program**II. B. Key Program Goals and Related Target Assumptions****Budgets\*:**

	<b>2000</b>	<b>2001</b>
New Construction / Multi Family	\$2,500	\$21,302
In-Home Services	\$131,919	\$132,712
Total Low-Income	\$134,419	\$154,014

\* Includes funding for program planning and administration, program marketing, customer/contractor rebates, program implementation, evaluation and market research and design-level performance incentives.

**Performance Incentive Metrics (basis for FG&E incentive):**

<b>Metric Description</b>	<b>2000</b>	<b>2001</b>
Provide services to XX customers	418 customers \$6,304	NA
Participate in LEAN initiatives	\$6,304	See 3 metrics below
Train internal customer service staff	NA	Design/Exemplary \$3,856/\$4,820
Support LEAN outreach efforts	NA	Design/Exemplary \$3,856/\$4,820
Assist LEAN in evaluating software	NA	Design/Exemplary \$3,973/\$4,996
Total:	\$12,608 (Design level)	\$11,685 (Design) \$14,606(Exemplary)

**Unit Targets (2001 Program Year - Benefit/Cost Model Assumptions):**

<b>Measure/Service</b>	<b>New Construction (Units)</b>	<b>In-Home Services (Units)</b>
Total Participants	9 (5 MF, 4 SF)	175
Refrigerators	7 (@ \$138/unit)	70 (@ \$575/unit)
Clothes Washers	7 (@ \$315/unit)	4 common area (@ \$1000/unit)
Lighting CFLs	NA	399 (@ \$10/unit)
Lighting Fixtures	22 (@ \$25/unit)	250 (@ \$25/unit)
Dishwashers	6 (@ \$173/unit)	NA
Room AC	2 (@ \$71/unit)	NA
ENERGY STAR <sup>®</sup> Home	4 (@ \$750/unit)	NA
ENERGY STAR <sup>®</sup> Multi-Family Unit	5 (@ \$975/unit)	NA
DHW Packages	NA	80 (@ \$37/unit)
Thermostats	NA	25 (@ \$50/unit)
Air Sealing Measures	NA	25 (@ \$140/unit)



Program

Insulation	NA	5 (@ \$650/unit)
Fuel Blind Package	NA	13 (@ \$750/unit)

**II. C. Program Flow**

This section includes a summary of the program as designed. This information was taken primarily from the FG&E's 5-Year Energy Efficiency Program Filing, Docket No. D.T.E. 98-48/49 (5-Year Plan) and does not necessarily reflect the manner in which the program is actually being administered.

Administration - Oversight administration is provided by the FG&E's internal staff.

Administration with respect to program delivery/operations is provided under contract to FG&E by the Montachusset Opportunity Council (MOC), the lead weatherization network vendor in FG&E's service territory. In some cases, it is most efficient or economical for MOC to subcontract certain program components (e.g., refrigerator procurement). To the greatest extent practical, all of these activities are jointly performed or coordinated with other administrators and the Low-Income Energy Affordability Network ("LEAN").

Marketing – Marketing is the responsibility of MOC. For the In-Home Service component, direct mail is the primary marketing approach. In addition, customers are marketed through bill inserts, telemarketing, and literature distributed through social service agencies and government offices. For the New Construction, Multi-Family and Rehabilitation component, forming or expanding relationships with housing authorities and owners/developers of low-income residences have been identified in FG&E's program documentation as the marketing approach of choice. Other identified marketing approaches include: coordination with the statewide ENERGY STAR<sup>®</sup> residential new construction program, and inquiring at government agencies such as HUD and the Department of Housing and Community Development ("DHCD") to identify non-housing authority owners and potential developers<sup>4</sup>.

Delivery of Services – Implementation of program is the responsibility of MOC and is carried out through in-home visits by trained staff (energy managers) from local WAP agencies. Energy managers install efficiency measures and prepare work orders for other services (e.g., refrigerators, weatherization), piggybacking with other programs (especially those of DOE, DHCD, and gas utilities) where possible, and educate customers about the measures. Fuel blind installations are performed to DOE WAP specifications, criteria, and priorities. During 2001, \$10,000 has been budgeted for fuel blind measures (*i.e.*, measures to conserve heating fuels other than electricity or pipeline natural gas). Installations are followed up to ensure proper delivery and to reinforce educational messages. For homes with electric space heating, installed measures may include heating system repair or replacement (on a piggyback basis with the Commonwealth's HEARTWAP program), wall and ceiling insulation, blower door assisted sealing, interior storm windows, set back thermostats, and hot water tank and pipe wraps. WAP and HEARTWAP services are offered to customers with incomes up to 175% of the federal poverty limit. In contrast,

<sup>4</sup> To date, these marketing measures have not all been implemented.



Program

FG&E's Low-Income Program services are available to customers up to 200% of the federal poverty level.

In addition, WAP network staff meets with the Joint Management Committee of the ENERGY STAR<sup>®</sup> Homes program as needed to refine program design and address specific low-income issues. The Low-Income Multi-Family program is similar to the single-family program, with additional multi-family specific measures, including common area lighting fixtures, common area clothes washers and educational materials about reducing operating costs through energy management and maintenance practices.

### **III. Staff and Contractor Depth Interviews**

This section of the Process Review presents the results of the depth interviews that were conducted with program staff and contractors. It begins with a brief description of the methodology used to conduct the interviews followed by a summary of key findings and a detailed account of the interview results.

#### **III. A. Methodology**

A single interview guide was developed to obtain primary information on Program logic and flow, to assess various staff's level of knowledge of key program goals and objectives, to identify any additional program materials being used, and to obtain opinions on program effectiveness. Upon FG&E approval of the interview guide, GDS conducted eight depth interviews with program staff from Unitil (2), MOC (4), CSG (1), and LEAN (1). Although the single interview guide covered areas that were not relevant to every interviewee's day-to-day exposure to the program, the interviewees were encouraged to answer each question to the best of their knowledge. Five of the interviews were conducted in person and the remaining three were done via telephone. The interviews ranged from one to three hours in length.

For these staff and contractor interviews, the following researchable areas were covered:

1. Interviewee's Role, Program Goals, and Program Planning
2. Participant Recruitment and Marketing
3. Program Design and Operations
4. Information, Resources, and Staffing
5. Internal Communications and Administration
6. Communications with Program Participants and Program Participant Service
7. Program Issues and Innovations
8. Overall Performance

#### **III. B. Key Findings**

This section presents a summary of the key findings from the staff and contractor interviews within each of the eight researchable areas that the interviews targeted. The interviews were



Program

very informative and offered an excellent opportunity to hear the details of the program operations from every perspective. The use of a single interview guide was conducive to allowing the various program staff to voice their opinions on each component of the program. Although they came at them from different angles, many of the issues were similar across all interviewees.

1. Interviewee's Role, Program Goals, and Program Planning

The interviewees' responses indicated that program goals and objectives are not clearly defined and that there is no single document that the various program staff can refer to when necessary. Both implementation contractors reported that there was ambiguity in the specifics of the program and that a detailed scope of work would be helpful. Specific comments included:

- "Would like a new clearly defined document."
- "To conserve energy seems to be the goal although I've never read that anywhere."
- "Until sent production goals by email and then had to double check to see if they were right."

Concerning the LEAN/MOC communications, it was indicated by those that had some exposure to program planning that there was no process in place for planning or for major program modifications. One comment (from a program contractor) that suggests the need for better communication between LEAN and MOC was:

- "Not looking to go to more meetings but not sure how the numbers are arrived at, they jumped around quite a bit."

2. Participant Recruitment and Marketing

Although the program is on target to reach the goal for number of audits, there appears to be concern from FG&E about the current participant recruitment efforts being conducted by MOC. The concern seems to be the result of a lack of good information about what their marketing efforts entail. From MOC's perspective, a major issue in this process is the status of FG&E's list of eligible R-2 customers and the electronic delivery of the list to MOC. Although FG&E has stated that they have sent updated R-2 lists on a quarterly basis throughout 2001, MOC reports that the data includes no new customer information. MOC indicates that there are several problems concerning the list, including:

- It is outdated and there is no way to electronically cross-reference customers to determine those already served by the program;
- Usage data in many cases is outdated and more than a year old;
- Audit system only allows auditor to carry customer usage data for scheduled audits which rules out an impromptu, "interested neighbor" audit;
- Requires regular emails to FG&E requesting usage data for those not on current list.



Program

Other suggestions for improving program recruitment were: 1) include program marketing material in bill stuffers; 2) reduce the eligibility requirement from 13 kWh/day to 10 kWh/day; and, 3) increase community outreach efforts to include churches and other faith-based organizations.

Concerning customer segments that are not well served by the program, the interviewees were consistent in identifying the elderly and the working poor. Suggestions to be better reach these populations included: 1) holding more presentations at elderly community meetings, especially in the fall when Fuel Assistance programs are being rolled out; and 2) target program education efforts at employers in the region.

### 3. Program Design and Operations

The program implementation process flow is graphically illustrated in Figure 2 of the Executive Summary. The main problem area in the program flow was indicated to be the same issues concerning the list of eligible R-2 customers. In addition, a general lack of flexibility in the software system was noted as a root cause of several inefficiencies, including: 1) limited reporting capabilities; 2) inability for user to update measure lists.

Although the general quality of work performed was noted to be good, several interviewees noted quality control as an area of the program that requires attention, as there is currently no formal quality assurance field monitoring for the program. It was believed that ongoing random quality control visits would help to uncover problems and reinforce that the program is being delivered and received as intended. Under the current process, FG&E reviews recommended measures and associated savings estimates on the invoice paperwork and any questions or anomalies are addressed. However, the MOC auditor conducts 100% field inspection/review of any weatherization work that is subcontracted.

Concerning the audit software, the field auditor noted that one deficiency in the audit tool is that, unlike the tool used by MA Electric, the customer's disaggregated usage is not tied to the actual billing data. Therefore, the software would not capture a malfunctioning appliance or unidentified load. In addition, he noted that the audit software was somewhat constrained by allowing the auditor little flexibility, which made the audits simpler but on certain occasions they were not as accurate as they could have been.

Other problem areas in the program's day-to-day operations were identified to be:

- Resolving software issues cuts into time spent on achieving goals;
- 2001 program year has been confusing as multi-family program is not systemized yet;
- Better relationship between MOC and CSG will allow better focus on program goals; and,
- For MOC and FG&E to work more as partners rather than at odds would allow better focus on program goals.



Program4. Information, Resources, and Staffing

Level of staff appears to be an issue for FG&E, MOC and CSG. In the case of FG&E, MOC staff indicated that it can be difficult to get a timely response from FG&E on requests that are related to the day to day operation of the program, such as obtaining customer usage data. Regarding staffing at MOC, interviewees indicated that although adequately staffed, MOC may need additional program-specific training. With respect to CSG, MOC staff feel that software issues are not well attended to and that there is a general lack of responsiveness to issues that may have a direct impact on the operation of the program.

5. Internal Communications and Administration

Overall, the responses to communications regarding program operations and administration indicated that there is a need to formalize many of the program procedures. All of the interviewees indicated an area that would be better served by a process with formal protocols. These include:

- A new, more detailed contract with MOC;
- More definition on NC/MF area, including public housing;
- CSG and MOC typically communicate via telephone but email with cc to FG&E would be preferable; and,
- Development of a program manual to use as a reference.

6. Communications with Program Participants

There has been no formal evaluation efforts conducted but general participant feedback was reported to be very positive.<sup>5</sup> For multi-family projects, it was noted that it is critical to keep the management of the building in the loop once the project gets started because the maintenance staff does not always communicate effectively with management.

7. Program Issues and Innovations

The interviewees identified the following key issues / concerns related to the program:

- The commingling of funds between WAP and FG&E needs to be more formalized;
- A clearer definition is needed regarding what the NC/MF component entails;
- Allow for a small pool of funds (\$6K-\$8K) to be used for various measures, including Energy Star appliances, for cost effective instances;
- Develop a program manual to be used as a reference and to ensure continuity through changes in staff; and,
- Better identify and correct remaining software issues.

Concerning modifications that have been made in the past year to improve the program, the only specific instance noted was that FG&E has indicated that MOC is the prime contractor

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<sup>5</sup> General awareness and participant satisfaction will be assessed in Phase II of FG&E's residential electric low-income program evaluation.



Program

on the program and has instructed CSG to work through MOC on program implementation. CSG noted that they are "optimistic about the prospects". It was also noted that FG&E has provided software support and training and marketing support and has worked to align CSG and MOC in addressing multi-family projects.

**8. Overall Performance**

Overall interviewee program ratings for both the success of the program and the quality of the program were very good. On a scale of 1 to 10, the average rating for program success was 8.6 and for program quality was 7.8.

Key program strengths were noted to be:

- Unitil staff, new staff member has been added to program;
- Commitment to serving Low Income program from both MOC and FG&E;
- Work well with customers and are interested and willing to help customers; and,
- Years of experience at MOC and CSG.

Key program weaknesses were noted to be:

- Audit software tool and administration at contractor level;
- Software issues;
- Difficult to work under major program change – multi-family component; and,
- Lack of updated data for R-2 customers.

Final comments were generally positive; "the FG&E Low Income Program is a good one".

Specific added comments included:

- A clearer list of eligible measures would be very helpful;
- Overall software mechanism needs to be improved;
- Random field quality control visits would help to uncover potential problems and/or reinforce that the program is being delivered & received as intended.<sup>6</sup>
- The small size of FG&E is both a strength and a weakness in that it gives management staff the flexibility to be innovative while also creating incentives for staff to follow the program paths of the larger MA utilities.

**III. C. Results from Depth Interviews**

This section includes a more detailed summary of the responses from the staff and contractor interviews.

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<sup>6</sup> Program quality will be assessed in Phase III of FG&E's residential electric low-income program evaluation. However, ongoing (independent, third party) quality control checks have also been suggested.



Program**1. Role, Program Goals, and Program Planning**

The interviews were conducted to encompass all facets of the program, with roles ranging from initial program design to day-to-day implementation. Experience levels for each of the interviewees were very extensive and related experience averaged 4 years for Unitil staff, 16 years for MOC staff, 11 years for CSG and 24 years for LEAN.

The most commonly stated program goal was to save electricity and money for low-income customers. Responses to whether the goals and objectives are clearly defined indicated that there is not a commonly used reference document for the program and that individual interpretations of the programs' goals and objectives vary. Concerning how the goals translated into what was required from the interviewee, the perceived goals were considered reasonable and the most common responses were to reach production levels of units served and to spend the allotted budget. Similarly, specific targets were identified as the number of audits completed and the spending of the budgeted dollar amounts.

The majority of the interviewees (5) noted that they were either not involved in the program planning process or that they would be willing to be if asked. Two responded that they were involved, or hoped to be involved, in program planning but that there was no process in place.

**2. Participant Recruitment and Marketing**

Every interviewee described the participant recruitment process very similarly. A common problem noted in this process is the transfer of the list of eligible (R-2) customers from FG&E to MOC. It was indicated that the list needs to be updated more frequently and that the current process of manually cross-referencing the list needs to be automated. Postcards notifying customers of the program were noted to generate a better response than letters. Other effective means of recruitment included community meetings coordinated with groups such as Elder Services and Head Start, word of mouth from satisfied participants, and newspaper ads and articles. Bill stuffers were highlighted as an effective means to complement the current recruitment. In addition, it was noted that lowering the eligibility requirement from 13 kWh/day would help to spur production – MA Electric lowered theirs to 10 kWh/day and it increased participation.

The elderly population and the working poor were noted as being particular segments of the low-income population that are not responding to the program recruitment efforts. The elderly have a general suspicion of “free” items and holding more presentations at elderly community meetings, especially in the fall when Fuel Assistance programs are being rolled out, would be one way to better reach the elderly population. Another effective means to reach the elderly was noted to be word of mouth from satisfied participants, which can lead to somewhat of a “domino effect”. In order to reach the working poor, it was suggested that program education efforts be targeted at employers in the region. This, however, was noted



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to be difficult because most employers are reluctant to admit that their employees would be considered working poor.

With respect to whether the participants pay their electric bill or not, responses indicated that nearly all of the participants to date pay their own electric bill due to the program eligibility requirement that they be on the R-2 rate. However, the current project at a large multifamily building was noted to be the first large public housing project where the residents do not pay their own electric bills.

Other groups with which the program works in order to increase participation were identified as: Elder Services, Head Start, Spanish Center, Meals on Wheels, Fuel Assistance, Senior Centers, Day Cares, Salvation Army, Public Housing Authorities and Property Management Companies. It was noted that further coordination with faith-based groups could assist program recruitment efforts.

**3. Program Design and Operations**

With the exception of CSG, the interviewees consistently described the step-by-step process of the program (graphically illustrated in Figure 2 of the Executive Summary). Because CSG only works on the Multi-Family/New Construction component of the program, the process is slightly different for CSG. Rather than working from the R-2 list that FG&E provides, CSG is provided multi-family leads from FG&E and then follows up directly with each lead. Buildings are typically viewed prior to contacting the owner/manager to assess project potential. Once an audit is scheduled, FG&E will provide CSG with the building's electrical usage data. CSG will then conduct the audit and identify the opportunities for energy savings using the benefit cost functions of the audit software. Upon approval by MOC/FG&E, CSG will then install sample installations for the owner/developer to observe prior to full installation. Upon owner approval, measures are installed, with electrical and insulation subcontractors as necessary. After completion of the multifamily installation, CSG's Project Coordinator conducts a quality control visit. [In order to assist in the transition to the new NC/MF segment of the program, FG&E played an active role in coordinating the respective roles of MOC and CSG on the first large multifamily project.]

Concerning the In-Home Services component of the program, two issues were raised concerning the process of serving customers. The first related to the need for MOC to request billing data for customers that were not included in the list of R-2 customers that is provided by FG&E. This was noted to not be a major problem (25 out of 175 customers) but can cause delays in the delivery of audits and adds an extra layer of work, which was perceived to be avoidable. The second issue had to do with the age of the billing data included in the list provided by FG&E and that some of the customer's data is over year old due to delays/problems in getting an updated list. Although FG&E has stated that they have sent updated R-2 lists on a quarterly basis throughout 2001, MOC reports that the data includes no new customer information.



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Aside from the occasional delay in obtaining usage data, there were no problems noted concerning specific bottlenecks in the system. It was also noted that the process of hiring subcontractors to conduct follow-up weatherization and refrigerator installation work was smooth and the work was typically completed within two weeks of the audit.

The forms that are used by the program were reported to be adequate and there were no problems or redundant efforts associated with them. The key program data is transferred via the invoicing procedure to FG&E. The invoice, and all associated paperwork, is sent to FG&E, in hard copy only, on a monthly basis. Concerning forms or reports that would be helpful, two were noted: 1) report that summarized marketing efforts; and 2) an up-to-date listing of eligible customers' usage data. It was noted that the FG&E program uses considerably less paper than the MA Electric program.

With the exception of master-metered housing authority buildings, the program determines the mix of measures to be recommended based on the audit software. It was reported that common area and other non-residential retrofits are referred to FG&E.

In general, there were noted to be rare occasions when measures were rejected and they were typically CFLs due to their size/shape and/or quality of light. From the perspective of FG&E staff, it is perceived that the subcontracting of work beyond the initial audit is a barrier to more recommended measures, such as thermostats, hard-wired fixtures, insulation and replacement windows. CSG noted that addressing code issues related to lighting is somewhat easier because FG&E will allow them to install electrical boxes where they did not exist. Suggestions for additional measures beyond those currently offered by the program were a wider array of lighting and Energy Star appliances. Ways to incorporate these additional measures were given to be: 1) tie-in with Energy Star window air conditioner trade-in program; 2) through a more comprehensive fuel blind audit; and, 3) favorable outcome on DTE's review of the cost effectiveness of Energy Star appliances.

The general quality of fieldwork performed was noted to be good, with one interviewee adding the caveat that the quality is limited by the audit software. There is currently no formal quality assurance field monitoring for the program. Recommended measures and associated savings estimates are reviewed by FG&E on the invoice paperwork and any questions or anomalies are addressed. However, the MOC auditor conducts 100% field review of any weatherization work that is subcontracted. A field inspection/review of random sites was noted to be under consideration.

Customer education was noted to be primarily conveyed verbally between the auditor and the customer, with the audit report being the information that the customer receives. The information included as part of the audit report was felt to be useful and includes: 1) a graph of annual electrical usage; 2) a pie chart of disaggregated usage; and, 3) a bar chart of the



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top five recommendations with dollar savings estimates. It was noted that further information may be useful because during MA Electric audits, while the auditor is running the analysis, customers often read the additional printed material on energy savings. Language was noted as the only potential barrier for delivering education and it was addressed through bi-lingual staff that can be called on when needed.

When asked about conflicts between the program's goals and its day-to-day operations, responses varied and included:

- Resolving software issues cuts into time spent on achieving;
- This year has been confusing as multi-family program is not systemized yet;
- Program is not maximizing savings due to the limitation on such measures as hard-wired lighting, thermostats, insulation and replacement windows;
- Better relationship between MOC and CSG will allow better focus on program goals;
- Lack of good, current, unreplicated list of R-2 customers and their usage;
- For MOC and FG&E to work more as partners rather than at odds would allow better focus on program goals; and,
- Single point of contact at FG&E dedicated to fixing all problems once and for all.

**4. Information, Resources, and Staffing**

The primary vehicle for collecting and storing program data is the CSG audit software. Basic demographic information, electric utility account number, electricity usage, recommended and installed measures and associated savings are all included as part of each customer record. However, it was noted that FG&E does not receive an electronic update of the audit activity on a monthly basis but only an invoice summary that is sent in hard copy.

MOC is in the process of linking the data collected through the FG&E program with that covered by other services that MOC performs so that they can determine a non-redundant list of customers served. This is being required under their CSBG funding agreement.

Responses to the question of whether there was adequate staffing were broken down as follows:

FG&E/Unitil – Half of the interviewees responded that there was enough staff at FG&E. Of the others, responses included: 1) There seems to be enough but as other priorities arise, staff time gets stretched. 2) Overall, there is not adequate staffing at FG&E at the day-to-day program level.

MOC – The majority of the interviewees felt that there was enough staff at MOC. MOC noted that they have recently hired a part-time bi-lingual employee to assist with marketing. The one comment related to the level of MOC staff was that there was not enough program support and that it may have more to do with the available resources and training than the number of staff.



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CSG – Half of the interviewees responded that there was adequate staffing at CSG. The remaining interviewees all commented that they have either experienced or heard about difficulties with having CSG respond to software related problems. It was noted that CSG is receptive to FG&E but not as receptive to MOC.

**5. Internal Communications and Administration**

Responses concerning the program communications indicated that the monthly invoicing is the only formal communication between any of the parties. Informal communications are conducted primarily through email and telephone and typically are prompted by data or other program information needs. Communications were reported to be good overall, but a few comments were: 1) FG&E needs to give more notice when requesting specific data or informational needs; 2) communications between audit staff and FG&E could be better; 3) CSG and MOC typically communicate via telephone but email with cc to FG&E would be preferable; and, 4) internal communications at MOC could be improved.

Communication concerning program policy was noted as being either non-existent or requiring improvement. It was noted that MOC's contract does not include policy language and that it is not clear about the tasks they are contracted to perform. Because an original contract has been referred to and extended over time, with no clear updated scope of work, it is felt that there is no good reference guide for how the program is supposed to be delivered. This was thought to be especially true for the recent program modifications concerning multi-family projects. Also, LEAN mentioned that although MOC attends monthly meetings, there is no paper trail that ties back to the FG&E program and there should be.

It was felt that overall, reporting procedures with other utilities were less problematic than with FG&E and that there was no manual data entry required with other programs. It was further noted that it would help if there were program procedures spelled out for the FG&E program and the development of a procedures "manual" was suggested.

**6. Communications with Program Participants**

Communications with program participants was characterized as good by six of the interviewees. Marketing and outreach were the areas that were noted to require more attention in order to ensure that the program reached all of the eligible population. It was also noted that it is important that a consistent message about the program be communicated. There has been no formal evaluation efforts conducted but general feedback was reported to be very positive. For multi-family projects, it was noted that it is critical to keep the management of the building in the loop once the project gets started because the maintenance staff does not always communicate effectively with management.



Program**7. Program Issues and Innovations**

When asked about issues or concerns that need to be examined and addressed regarding the design and delivery of the program, responses varied and included:

- The commingling of funds between WAP and FG&E needs to be more formalized and the process should involve LEAN;
- Process for selecting program software and audit tool should be reviewed;
- A clearer definition is needed regarding the NC/MF component ;
- Address renewable energy options, where appropriate;
- Allow for a small pool of funds (\$6K-\$8K) to be used for various measures, including Energy Star appliances, for the small instances when they make sense;
- Develop a program manual to use as a reference and to ensure that if a key program person were to leave, the program would continue without a major disruption;
- Better identify and correct remaining software issues (e.g., electronic transfer of audit data from MOC to FG&E, inability to re-load customer data, more flexibility in reporting and updating).

Concerning modifications that have been made in the past year to improve the program, responses included:

- FG&E has provided software support and training, marketing support and has worked to align CSG and MOC in addressing multi-family projects;
- FG&E has indicated that MOC is the prime contractor on the program and that CSG should work through them, CSG is optimistic about the prospects; and,
- LEAN is attempting to move toward an all-encompassing audit that would result in less paperwork and consolidate the delivery of services.

**8. Overall Performance**

Overall interviewee's program ratings for both the success of the program and the quality of the program were very good. On a scale of 1 to 10, the average rating for program success was 8.6 and for program quality was 7.8.

The high rating for program success was attributed to the program meeting the targets last year and on track to meet this year's target of audits completed. For program quality, two interviewees noted that the audit software tool could use improvement and that the comprehensiveness of the audits was suspect. In general, it was felt that it was too early to assess the success or quality of the New Construction/Multi-Family program.

Responses to the program's greatest strengths included:

- Utility staff, new staff member has added to program;
- Commitment to serving Low Income program from both MOC and FG&E;
- As a small utility with only one administrative contractor, FG&E has the opportunity to be creative;
- Work well with customers and are interested and willing to help customers;



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- Years of experience at MOC;
- Years of experience at CSG; and,
- Technical expertise and experience at MOC.

Responses to the program's greatest weaknesses included:

- Audit software tool and administration at contractor level;
- Software issues;
- Difficult to work under major program change – multi-family component;
- Marketing, auditing and reporting mechanisms, and program administration;
- Small utility reduces budget and can limit flexibility; and,
- Lack of updated data for R-2 customers.

Final comments were generally positive, with interviewees reiterating that overall, the FG&E Low Income Program is a good one. Specific added comments included:

- A clearer list of eligible measures would be very helpful;
- Overall software mechanism needs to be improved – not just the audit tool; and,
- Random field quality control visits would help to uncover potential problems and/or reinforce that the program is being delivered and received as intended.



## Appendix A

### Depth Interview Guide

#### **FG&E Low-Income Electric Energy Efficiency Program Program Design/Implementation Process Review Interview Guide: FG&E Staff & Program Contractors**

##### **Site & Telephone Interviews** (*Site preferred but can be done by telephone*)

Date: \_\_\_\_\_ Interviewer initials: \_\_\_\_\_

Name of Interviewee: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Category of Interviewee: ☐ FG&E Staff ☐ LEAN Staff  
☐ MOC Staff ☐ CSG Staff

Telephone number: \_\_\_\_\_ Length of interview: \_\_\_\_\_

### **Overview**

*The Interview Guide is a tool to guide the staff and contractor process review interviews and is intended to last 45 minutes to an hour. The guide helps to ensure the interviews include questions to gather information concerning the most important issues being investigated in this study. Probing questions to follow-up on areas of particular knowledge of individual staff are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals rather than others. The depth of the exploration with any particular interviewee will be guided by the role that individual played in the program's design, and operation, i.e., where they have significant experiences for meaningful responses. In order to have the guide refer similarly to issues across types of interviewee, one guide has been developed.*



Introduction and assurance of confidentiality of individual comments. Only a summary of the responses will be included in the formal FG&E Evaluation Report.



### ***Role, Program Goals, and Program Planning***

1. Please describe for me, briefly, your responsibilities with regards to the FG&E low-income program. Also, have you worked with just the In-Home Service component, or the New Construction/Multi-Family component as well? *[Prompt the interviewee to be explicit about their exposure the NC/MF component to get a sense of their understanding of it.]*
2. How long have you been involved with the FG&E program? Have you had any prior experience with low-income electric energy efficiency programs? What type – electric, gas, energy efficiency, WAP, health & safety? For how long?
3. Do you feel that the goals and objectives of this program are clearly defined? Please describe these goals and objectives? *[Prompt the interviewee to describe them separately for the In-Home Services and New Construction/Multi-Family component, if they are familiar with both.]*
4. How do these goals and objectives translate into what is required from you? Are the goals and objectives reasonable to carry out?
5. Are there specific targets that you need to reach and, if so, who are they set by? Are they reasonable? *[Are their targets specific to IHS and NC/MF?]*
6. Were you involved in the program planning process of either the In-Home Services or the New Construction/Multi-Family component? What was your role? Please describe the planning process. Did you think it worked well? What, if any, recommendations would you make to how program planning is conducted?
7. Are you, or do you expect to be, involved in any process that considers major program modifications? Please describe this process. Is the process adequate? If not, why not?

### ***Participant Recruitment and Marketing***

8. Please describe for me the participant recruitment process, if possible distinguish between the IHS and NC/MF components. Are these efforts sufficient to reach potentially interested customers (amongst the eligible population)? Are there particular low-income customer segments that are not responding to, or not reached by, this process? How might this process be improved?
9. Do you have a sense of what proportion of participants are from the recruitment process versus call-ins?



10. What proportion of the participants do you think pay their own electric bills? How important do you think this should be in targeting participants?
11. Are there other groups that the program works with in order to increase participation (e.g., community groups, city planning board, advocacy groups, outreach efforts)? Who are these groups? How are you working with them? How do you feel these interactions are going? Are they helpful in delivering the programs? Are there other liaisons you would recommend or different ways you think the program could work better in the communities it is trying to reach? *[Probe the interviewee again for a distinction between groups that might be related to the In-Home Services and New Construction/Multi-Family components of the program.]*

### **Program Design and Operations**

12. What is the step-by-step process from initial participant recruitment to completed participation, the program design chain? Please describe process separately for both the IHS and NC/MF components of the program.
13. Now, I'd like to go back over each step in the program process and know who is involved in that step, how long it takes, and what makes that step important to the overall success of the program operation. *[From application through installation and payment.]*
14. What forms and program material are involved in each of these steps? How adequate are they for the task they are performing? Is there wasted paperwork or redundant efforts? What are they? Are there things (reports, forms, data) that you need that you are not receiving? What appears to be working best? *[Request a copy of material identified.]*
15. What is the process for determining what measures are recommended for a particular customer? Please distinguish between IHS and NC/MF to the extent possible.
16. From what you've seen, how does the program ensure there are no lost opportunities? Lost opportunities include any energy efficiency measures that could have been installed through the program but were not.
17. If any, what recommended measures are rejected by participants? What proportion of participants reject these measures? Why?
18. Are there measures that you think would be beneficial that are either not in the program or not recommended very often because of obstacles (e.g., hard wired



fixtures in kitchens or porches)? What are these? How might additional cost-effective measures become part of this program?

19. What is your opinion about the general quality of work being performed? What is the process for quality assurance? Is the inspection process working as intended? Any concerns/problems?
20. What is the program's goal in providing energy education? Is it delivered as planned? What is the process of energy education with participants? What materials are provided? Are these helpful? Are they adequate? What types of customers don't they seem to work well with? What are the barriers (e.g., language, education)? Are there methods available to address these barriers? What could be done to improvement this? [*Request a copy of identified materials.*]
21. What conflicts, if any have you experienced between the program's goals, as you understand them, and its day-to-day operation?

### **Information, Resources, and Staffing**

22. What types of data is the program collecting that you are aware of? Who is responsible for maintaining this data? Is it stored in an electronic database? How often is it updated? Who is responsible and what forms of accountability are in place? What additional data should be collected?
23. What program data do you use to perform your job? Are you able to access the data you desire easily? Is it easy for you to produce usable reports? Is the data of sufficient quality and reliability for your job? Is there additional data that could be collected that you would find valuable? Who should be responsible for this data collection? [*Request a copy of common reports.*]
24. Is there adequate staffing for this program at FG&E?
25. Is there adequate support for this program from the administration agency?
26. Are adequate resources being provided at the contractor level to provide service in a timely and quality manner?
27. In your opinion, is the mix and skills of the program staff you work with appropriate? Do their skills match the tasks they are asked to perform? If not, please explain. [*Try to steer the interviewee away from finger pointing.*]
28. Is the level of training, general and technical, adequate for the personnel involved in the program? If not, what needs to be improved?



## **Internal Communications and Administration**

29. What are the formal and informal communications channels between FG&E and MOC? How effective is this communication?

Between MOC and its contractors [CSG]?

Between FG&E and the contractors? If there is no direct link, should there be?

30. Overall, how would you characterize communications concerning day-to-day program operations? How do these help you perform your job? What aspects could be improved that would enable you to do your job more quickly, easier, and/or more effectively?
31. How would you characterize overall communication regarding program policy?
32. What procedures do you use concerning contracting and payment of agencies? Invoicing and payment procedures for vendors/contractors? Are these procedures adequate? Do you feel it works well (timeliness, equitable, efficiency)? Is it fair? Can you identify any items that interfere with communication, such as certain protocols that may cause bottlenecks? How are they compared to other program procedures you've seen elsewhere? Do you have any recommendations for improving these? Please explain.
33. What sort of feedback have you had about this program from other agencies? Other contractors? Has this changed over the last year?

## **Communications with Program Participants and Program Participant Service**

34. How would you characterize program communications with program participants? How does the method used and quality of communication affect the participants? How does it affect program success? *[Prompt the interviewee to address the following areas: Awareness, Marketing, Telephone Contacts, Delivery of Services, Delivery of Education, and Program Satisfaction.]*
35. What sort of feedback have you heard from program participants concerning this program? Has this changed over the last year?

## **Program Issues and Innovations**



36. Do you see any issues or concerns that need to be examined and addressed regarding the design and delivery of this program?
37. Over the past year, have any of the parties involved in the program [FG&E, MOC, LEAN, CSG] made modifications to improve the program design and/or delivery effectiveness? What, if any, are these?

### **Overall Performance**

*[The next two questions address the success and quality of the program. Please note that they are different and do not always go hand-in-hand.]*

38. How successful toward achieving program goals do you think FG&E's overall Low Income program is on a scale of 1 to 10 with 1 being the lowest and 10 being the highest? Why? Success rating by individual goal category as previously described? How would you rate the HIS and NC/MF components on the same scale?
39. How would you rate the overall quality of FG&E's Low Income program on a scale of 1 to 10 with 1 being the lowest and 10 being the highest? Why? Quality rating by individual goal category as previously described? How would rate the HIS and NC/MF components on the same scale?
40. What are the program's greatest strengths? If possible, distinguish between the IHS and NC/MF components of the program.
41. What are the program's greatest weaknesses? If possible, distinguish between the IHS and NC/MF components of the program.
42. Finally, I would like to thank you for your time and input and ask if there is anything else you would like to add?

Thank you very much for taking the time in assisting us with this evaluation. Your contribution is a very important part of the process. We will send out a summary document concerning program design after completing the interviews.